REMARKS

The Official Action of July 16, 2002 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The recitations from Claims 26 and 27 have been inserted into the independent Claims 23 and 50, and Claims 26 and 27 have been canceled. This removes the basis for the Examiner's rejection at paragraph 3 of the Official Action. All claims presently of record are believed to be sufficiently definite to satisfy the dictates of 35 USC 112, second paragraph.

Certain claims stand rejected under 35 USC 102(b) as allegedly being anticipated by Tomita et al '224 or under 35 USC 103(a) as allegedly being unpatentable over Tomita et al '224 in view of Taniguchi et al or over Soffel in view of Tomita et al '224. Certain claims stand rejected under 35 USC 102(e) as allegedly being anticipated by Takizawa et al or under 35 USC 103(a) as allegedly being unpatentable over Takizawa in view of Taniguchi et al, Yatake, or Tomita et al '224. Applicants respectfully traverse these rejections.

With respect to the rejections based on Takizawa et al, Applicants pointed out in the Amendment filed 21 February 2002 that Takizawa et al disclose ampholytic polymers, not cationic polymers as claimed. The Examiner has acknowledged this, but contends at page 10 of the Official Action that (a) the claimed cationic water-soluble resin can comprise additional repeating units including the anionic monomers disclosed in Takizawa et al, and (b) when an ink comprising the Takizawa et al ampholytic polymer is above the isoelectric point of the polymer, the polymer can exhibit cationic characteristics. Applicants respectfully submit that these contentions miss the point.

The point is that the claims require the recited water-soluble resin (as a whole) to be "cationic" and not just that the water-soluble resin comprise cationic monomers. A "cationic resin" is, by definition, one that will collect at the negative pole or cathode when immersed in liquid media and subjected to electric potential (without regard to the pH of the liquid media). By contrast, an "ampholytic resin" is one that will collect at the negative pole in acid media and at the positive pole in basic media. The two terms are mutually exclusive. An ampholytic resin may collect at the negative pole when it is immersed in acid media and subjected to an electric potential, but this does change it into a cationic resin. On the other hand, if the repeat units of a cationic resin are changed such that the resin no longer collects at the negative pole when immersed in liquid media and subjected to electric potential, the resin can no longer be called "cationic". Accordingly, while the claim recitation "cationic water-soluble resin" may not preclude the resin from comprising anionic monomers, it does preclude the resin from comprising a proportion of anionic monomers that would render the resin ampholytic.

The Takizawa reference teaches an ampholytic resin, and not a cationic resin and thus does not show or suggest the claimed "cationic water-soluble resin". Indeed, insofar as the ampholytic character of the resins described in Takizawa is integral to the functioning of the inks described therein (see Takizawa at, e.g., paragraph bridging columns 3 and 4), the reference teaches away from the claimed "cationic" resins and cannot properly be combined with any of the cited secondary references to arrive at the claimed invention. Accordingly, it is respectfully submitted that the rejections based on Takizawa should be withdrawn.

With respect to the rejections based on or involving Tomita et al '224, the Examiner considers the reference to anticipate the claims because, when read fairly as a

whole, the reference allegedly teaches only a small number of species and allegedly clearly names the recited species. Applicants respectfully submits that this is not a fair reading of the reference as a whole.

The reference as a whole teaches that the compositions described therein should comprise one of three genera of polyamines, only one of which includes the recited species and only if the substituent R is selected appropriately from among several possibilities. The reference teaches only inferentially, by inclusion of examples, that a pH adjustor may optionally be present in the composition, in that two specific pH adjustors are used in the Examples. However, there is nothing in the reference that limits the pH adjustor to the two species exemplified in the specification and, accordingly, the universe of pH adjustors that may optionally be included in the compositions described in the reference is huge. There is nothing in the reference to indicate that the polyamine in the ink compositions of the Examples should comprise the claimed resin in combination with one of the exemplified pH adjustors and thus nothing that clearly names the claimed combination of resin and base.

Under these circumstances, it is respectfully submitted that the authority cited for the proposition that the reference anticipates the claimed combination is inapposite. This is not a situation wherein a species can be at once envisaged from a generic chemical formula. Rather, this is a situation where one must first pick and choose between generic formulae and then from among substituents of a generic formula, and then combine the selection with another component that is only optionally included and that can be one of a vast number of possibilities. Under these circumstances, there can be no question of anticipation under 35 USC 102; the question, if any, is one of nonobviousness under 35 USC 103 (see *In re Baird*,

29 USPQ2d 1550 (Fed. Cir. 1994)).

Even assuming for the sake of argument that the reference could be used to set forth a *prima facie* case of obviousness for the invention as claimed, there is nothing in the reference to show a preference for the selection of a polyvinyl amine derivative or the selection of a recited substituent (methyl) or that such selections would be advantageous as compared, for example, to the selection of a polyethyleneimine derivative. By contrast, as discussed in Applicants' Amendment of October 25, 1999 at pages 6 and 7, the evidence of record in the Examples of the present specification shows that compositions comprising the claimed substituted polyallylamine are advantageous as compared to compositions comprising polyethyleneimine. Specifically, from the chart on page 26 of the specification, it may be seen that the Color Ink Set 9 of Comparative Example 3 performed poorly in the environmental stability test 3 described on page 26, lines 9-19 of the specification. As described in the specification at page 25, lines 1-7, Color Ink Set 9 is the same as Color Ink Set 5 of Example 22 (see specification at page 23, lines 2-20) with the exception that polyethyleneimine was substituted for the claimed substituted polyallyamine in the Comparative Example. Color Ink Set 5 performed well on each of the evaluations as shown on the chart on page 26 of the specification. (As discussed in Applicants' Amendment of October 25, 1999 at page 7, the Examples in the present specification also show advantages in selecting a substituted polyallyamine as opposed to a non-substituted one.)

Since there is no indication in the reference of any advantages in (a) selecting a polyvinyl amine derivative from among the polyamines described therein or (b) selecting a recited substituent from among the substituents described therein, the advantageous results shown in the Examples of the present specification could not have been expected from the reference. For this reason, the evidence in the specification is believed to be sufficient to

overcome any alleged prima facie case of obviousness set forth by the cited reference.

In view of the above, it is respectfully submitted that the rejections of record have been overcome and that the application is in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

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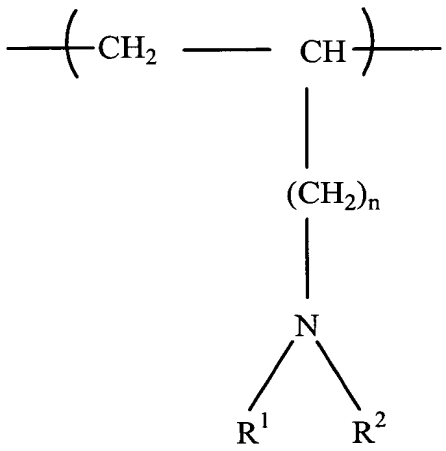
23. (Twice Amended) An ink composition consisting essentially of an alkali-soluble colorant, a water-soluble organic solvent, water, a cationic, water-soluble resin, a base which is a hydroxide of an alkali metal or an alkaline earth metal and, optionally, one or more of a nonionic water-soluble resin and an assistant selected from the group consisting of a penetration accelerator, a viscosity modifier, a surface tension modifier, a hydrotropy agent, a humectant, a pH adjustor, an antimold, a chelating agent, a preservative and a rust preventive; [the base being selected from the group consisting of a hydroxide of an alkali metal, a hydroxide of an alkaline earth metal, ammonia, mono-, di-, and tri-lower alkylamines, iminobispropylamine, 3-diethylaminopropylamine, dibutylaminopropylamine, methylaminopropylamine, dimethylaminopropanediamine, and methyliminobispropylamine,] the cationic, water-soluble resin comprising a repeating unit represented by the following formula (I):



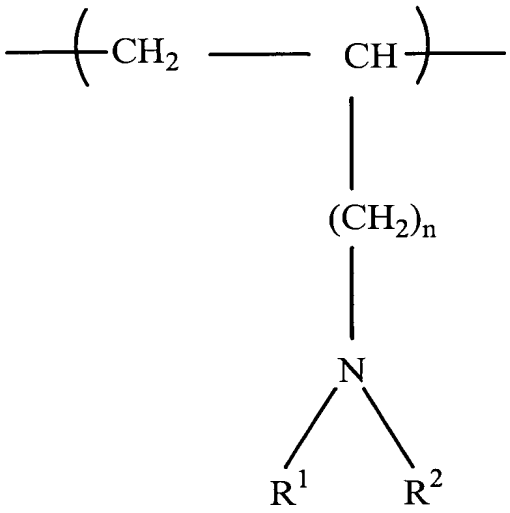
wherein R^1 and R^2 which may be the same or different represent a hydrogen atom or a C_{1-5} alkyl group, provided that R^1 and R^2 do not simultaneously represent a hydrogen atom; and

n is 0, 1, or 2.

50. (Amended) An ink set consisting of a black ink, a yellow ink, a cyan ink,

and a magenta ink, said black, yellow, cyan, and magenta inks each independently consisting essentially of an alkali-soluble colorant, a water-soluble organic solvent, water, a cationic water-soluble resin, base which is a hydroxide of an alkali metal or an alkaline earth metal and, optionally, one or more of [a base,]a nonionic water-soluble resin and an assistant selected from the group consisting of a penetration accelerator, a viscosity modifier, a surface tension modifier, a hydrotropy agent, a humectant, a pH adjustor, an antimold, a chelating agent, a preservative and a rust preventive;

the cationic, water-soluble resin comprising a repeating unit represented by the following formula (I):



wherein R^1 and R^2 which may be the same or different represent a hydrogen atom or a C_{1-5} alkyl group, provided that R^1 and R^2 do not simultaneously represent a hydrogen atom; and

n is 0, 1, or 2,

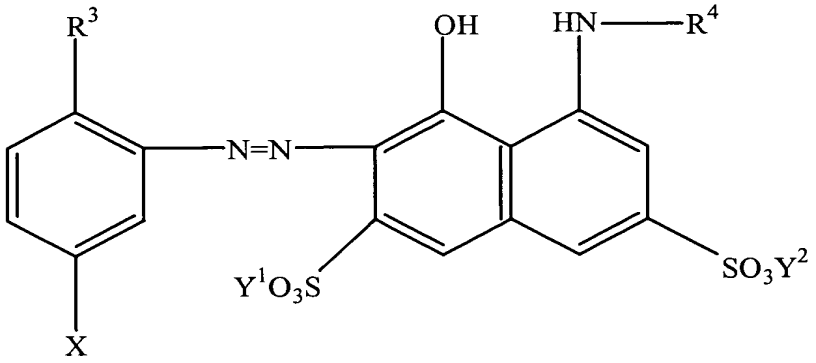
wherein the alkali-soluble colorant for the black ink is selected from the group of dyes consisting of C.I. Direct Black 19, 35, 154, 168, 171, and 195 and C.I. Food Black 2,

the alkali-soluble colorant for the yellow ink is selected from

the group of dyes consisting of C.I. Direct Yellow 50, 55, 86, 132, 142, and 144 and C.I. Acid Yellow 23,

the alkali-soluble colorant for the cyan ink is selected from the group of dyes consisting of C.I. Direct Blue 86, 87 and 199 and C.I. Blue 9 and 249,

the alkali soluble colorant for the magenta ink is selected from the group of dyes consisting of C.I. Direct Red 9 and 227, C.I. Acid Red 52 and 289, and dyes represented by the following structural formula (II):



(II)

wherein R^3 and R^4 represent a hydrogen atom, a C_{1-5} alkyl group, an aryl group, a C_{1-5}, alkoxy group, or a phenoxy group or a derivative thereof, a triazine ring or a derivative thereof, a carboxyl group or a salt thereof, or a sulfonyl group or a derivative thereof;

X represents a hydrogen or halogen atom; and

Y^1 and Y^2 which may be same or different represent an alkali metal atom, ammonium, or a C_{1-5} alkylammonium.